

• • R E M A R K S • •

The Official Action of February 7, 2002 has been thoroughly studied. Accordingly, the changes presented herein for the application, considered together with the following remarks, are believed to be sufficient to place the application into condition for allowance.

By the present amendment, claim 5 has been amended in the manner requested by the Examiner on page 2 of the Official Action. It is noted however that the typographical error in the "clean" copy of the claims submitted April 18, 2001 was not present in the original claims. Therefore, the amendment made herein for claim 5 may be moot.

Also by the present amendment, new dependent claim 13 has been added which recites that the step of refrigerating the encapsulated plant seeds is conducted at a temperature of about 15°C or lower and for a sufficient period of time to improve the germination of the encapsulated plant seeds as compared to non-refrigerated encapsulated plant seeds. Support for this limitation can be found in the first full paragraph on page 5 of applicants' specification and in the Examples presented on pages 6-9.

Entry of the changes to the claims is respectfully requested.

Claims 1-13 are pending in this application.

Claims 1 and 2 stand rejected under 35 U.S.C. §102(b) as being anticipated by U.S. Patent No. 5,701,700 to Kohno et al.

Claims 3-6 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Kohno et al.

Claims 7-12 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Kohno et al. in view of U.S. Patent No. 5,525,131 to Asano.

For the reasons set forth below, it is submitted that all of the pending claims are allowable over the prior art relied upon by the Examiner and therefore, each of the outstanding rejections of the claims should properly be withdrawn.

Favorable reconsideration by the Examiner is respectfully requested.

The Examiner has relied upon Kohno as teaching a method of preventing defective germination or growth of a plant by the steps of: encapsulating one plant seed or a plurality of plant seeds in an aqueous gel capsule; refrigerating the plant seeds under the conditions that the seeds do not germinate; and sowing the plant seeds.

Mr. Yasushi Kohno is a co-inventor of U.S. Patent No. 5,701,700 and a co-inventor of the present invention, and therefore is well familiar with both inventions.

The present invention distinguishes over Kohno et al. by the manner in which the step of refrigerating the encapsulated plant seeds effects improvements in germination.

This improvement is evidenced in the record by the fact that Kohno et al. specifically teach a lack of improvement and by the fact that applicants' specification includes comparative test results which establish improvements in germination.

Note specifically at column 3, lines 51-54 Kohno et al teach that:

The gel-coated seeds thus stored exhibit *equal* rate of germination and rate of sticking out to those of the gel-coated seeds immediately after preparation.

Thus, it is clear that Kohno et al. completely fails to teach or otherwise appreciate any effect that refrigerative storage has on the gel-coated or encapsulated seeds.

In contrast to Kohno et al., applicants' comparative Examples demonstrate that the gel-coated or encapsulated seeds that were subjected to refrigeration had both an improved germination rate and date of bolting, in addition to improvements in efflorescence, ratio or rosette-forming and length of cut flower.

It is therefore, clear from the record that applicants' step of refrigerating the encapsulated seeds is distinguishable and unexpected over Kohno et al.

The main purpose of the refrigeration step in Kohno et al. is to temporarily store the gel-coated seeds in an environment (temperature and humidity controlled) that will preserve the properties and characteristics of the gel-coating – hence the reason Kohno et al. teaches that the “stored” gel-coated exhibit equal rate of germination and rate of sticking out to those of the gel-coated seeds immediately after preparation.

Kohno et al. did not realize or discover that a step of refrigerating could be used to improve the germination of the gel-coated or encapsulated seeds.

Thus, Kohno et al. fails to anticipate or render obvious applicants' invention.

It is noted that in the gel-coated seeds in Kohno et al.'s Example that were tested for germination were stored for only 1-7 days. In contrast, in applicants' Examples the encapsulated seeds were refrigerated for 35 days. The results from these Examples indicate that Kohno et al. was unsuccessful in using refrigeration to improve the germination of gel-coated seeds, whereas applicants were successful.

Where as Kohno et al. is concerned with maintaining the characteristics and properties of the gel-coating on gel-coated seed during temporary store thereof, applicants' invention addressed and solve an entirely different problem – that of positively effecting the physiology of the plant seed to make "vernalization" take place.

Kohno et al. discusses the period of refrigeration in terms of storage days. Applicants' invention teaches refrigeration in terms of the number of days that effect "treatment" of the encapsulated seeds. These processes are fundamentally different.

In rejecting claim 2 the Examiner states that "Kohno et al inherently teaches the size of the plant seed is equal to or less than 1 mm since he teaches a radish seed."

This statement by the Examiner is in error, inasmuch as applicants note that the size of a radish seed is larger than 1 mm as a matter of fact.

Accordingly, the Examiner's basis for rejecting claim 2 is unfounded, and the rejection of claim 2 should properly be withdrawn.

The Examiner has relied upon Asano as teaching that it is old and well-known in the art of plant husbandry to pelletize a seed, and has taken the position that it would have been obvious to "apply the gel coating of Kohno et al. to the pelletized seed of Asano for the mechanized and economical distribution of the seeds in the field."

Contrary to the Examiner's position of obviousness, applicants note that it is very difficult to carry out a refrigeration treatment for a palletized seed prior to sowing, because pelletized seeds formed with clay materials per Asano would tend to dissolve during the preservation in the cooling solutions of Kohno et al.

Although a gel-coating according to the present invention avoids such problems, it is submitted that the existence of the problem of dissolving the pelletized coating which is not specifically addressed by either Kohno et al. or Asano would lead one away from the combination which the Examiner purports to be obvious.

Absent improper reliance upon applicants' own disclosure, it is submitted that there is no teaching within Kohno et al. or Asano which supports the Examiner combination of theses references.

Based upon the above distinctions between the prior art references relied upon by the Examiner and the present invention, and the overall teachings of prior art references, properly considered as a whole, it is respectfully submitted that the Examiner cannot properly rely upon the prior art as required under 35 U.S.C. §102 as anticipating applicants' claimed invention. Moreover, the Examiner cannot properly rely upon the prior art as required under 35 U.S.C. §103 to establish a *prima facie* case of obviousness of applicants' claimed invention.

It is, therefore, submitted that any reliance upon prior art would be improper inasmuch as the prior art does not remotely anticipate, teach, suggest or render obvious the present invention.

It is submitted that the claims, as now amended, and the discussion contained herein clearly show that the claimed invention is novel and neither anticipated nor obvious over the teachings of the prior art and the outstanding rejection of the claims should hence be withdrawn.

Therefore, reconsideration and withdrawal of the outstanding rejection of the claims and an early allowance of the claims is believed to be in order.

It is believed that the above represents a complete response to the Official Action and reconsideration is requested.

The prior art cited on page 4 of the Official Action, but not relied upon by the Examiner has been reviewed but is not believed to be particularly relevant to applicants' claimed invention.

If upon consideration of the above, the Examiner should feel that there remains outstanding issues in the present application that could be resolved, the Examiner is invited to contact applicants' patent counsel at the telephone number given below to discuss such issues.

To the extent necessary, a petition for an extension of time under 37 CFR §1.136 is hereby made. Please charge the fees due in connection with the filing of this paper, including extension of time fees, to Deposit Account No. 02-0385 and please credit any excess fees to such deposit account.

Respectfully submitted,



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Marked-Up Copy of the Claims  
As Amended on April 4, 2002

5. (Amended) The method of preventing defective germination or growth of a plant according to claim 3, wherein the plant seed is a seed of [alight] a light germinator.

New claim 13 was added as follows:

13. The method of preventing defective germination or growth of a plant according to claim 1, wherein the step of refrigerating the encapsulated plant seeds is conducted at a temperature of about 15°C or lower and for a sufficient period of time to improve the germination of the encapsulated plant seeds as compared to non-refrigerated encapsulated plant seeds.